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### Supersonic gas injection valve for beam neutralization from Applied-B pulsed ion diodes

K. Horioka, K. Ohbayashi, H. Yoneda, and K. Kasuya

*Department of Energy Sciences, The Graduate School at Nagatsuta, Tokyo Institute of Technology, Nagatsuta 4259, Midoriku, Yokohama 227, Japan*

(Received 28 May 1985; accepted 26 July 1985)

In place of conventional sonic injection gas puff valves, a supersonic gas injection nozzle has been developed to neutralize the pulsed ion beams extracted from Applied-B magnetically insulated diodes. This valve is driven by the magnetic pressure produced by the diode field coil. The features of this nozzle are its simple geometry, repetition capability, and easy timeable operation. Amounts of gas introduced in the diode section depend on the plenum pressure. Preliminary results of beam neutralization are described briefly. Applied Physics Letters is copyrighted by The American Institute of Physics.

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